64-002E

# Material Safety Data Sheet

## 1. Product and Manufacturer Information

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| Product Name : Flux-cored solder , Tin/Lead alloy and Solders |
| Manufacturer Address/TEL/FAX : Ku Ping Enterprise Co., Ltd. |
| TEL : 8862-8201-3987/88/89 No. 5, Lane 302, Hsin-shuh Road, |
| FAX : 8862-8201-2368-(2388) Hsin-Chuang City, Taipei Hsien, Taiwan |

## 2. Ingredients and Hazards

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| Chemical Characteristics : Tin/Lead alloy | | | |
| Hazardous Material Classification and Figure : CONTAINS LEAD - HARMFUL<br>CONTAINS ROSIN - IRRITANT | | G | |
| Hazardous Ingredients Name | WT% | C.A.S. Number | Organic Standard |
| Tin / SN | 60-64(see product marking) | 7440-31-5 | Not Applicable |
| Lead / PB | 36-40(see product marking) | 7439-92-1 | Not Applicable |

## 3. Health Hazard Data

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| The most hazard and effects : Ingalation, eyes contact and ingestion during use of the product. |
| Ingalation : When welding and the temperature can be up to 500°C, fume could be generated to cause anemia, constipation, abdominal pain . Over inhalation could be harmful to such systems as blood, nerv, fertile, digestion and urinary, In addition, the lead fume could be harmful to infantile nerve system of pregnant mother. |
| Skin contact : The melt and high-temperature tin-lead alloy could cause skin scalding. |
| Eye contact : Fume could be irritant or allergic to eyes. |
| Ingestion : It could cause vomiting; periodic ingestion could cause nerve system paralysis of arm and medial malleolus. |
| Symptom of hazard : Irritation of eyes, headache, skin allergy. |

## 4. Emergency First Aid

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| Different routes of entry : Eyes, skin contact, inhalation & ingestion |
| Inhalation : Remove person from exposure and restore breathing fresh air first, then get medical treatment. |
| Skin contact : Wash with soap water', use cold water to soak the scalded skin and see doctor for treatment, if necessary. |
| Eye contact : Flush eyes with large amount of water and get medical attention. |
| Ingestion : Get medical attention. |

## 5. Fire and Explosion Hazard Data

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| Extinguishing Media : $CO_2$, Chemical powder, Bubble type Extinguisher, Water |
| The hazard when extinguishing : Spraying melt alloy when it is being pouring water could cause persons to be scalded. |
| Special firefighting procedures : None recommended |
| Protective measures for firefighting man : Protective cloths and breath device are required to wear. |

## 6. Procedures if Material is Spilled or Released

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| Precautions for person : Recycle when the temperature of the spilled materials becomes cool and returns normal, but be careful to treat in order to avoid scalding. |
| Precautions for environment : Spilled materials must be recycled. |
| Steps to be taken if material is spilled or released : Scrape off and recycle when spilled materials are cooling down. |

## 7. Precautions to be taken in handling and storage

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| Handling : Working temperature shall not exceed 500°C in which persons shall wear protective equipment to avoid inhaling gas, powdery dust. |
| Storage : store in waterproof and non-polluted area. Put warning label and check regularly. |

## 8. Protective measures against exposure

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| Material engineering control : Provide adequate exhaust ventilation (general and/or local) necessary to meet exposure requirements. Control exposure concentration as low at allowable level. | | |
| Control Parameters | | |
| Average allowable concentration when 8 hours running TWA | Average allowable concentration when Short-time running STEL | Average concentration allowed CEILING |
| Sn : 2.0mg/m$^3$ ; Pb : 0.05mg/m$^3$ | Sn : 2mg/m$^3$ ; Pb : 0.15mg/m$^3$ | Sn : 58.2mg/m$^3$ ; Pb : 38.8mg/m$^3$ |
| Protective Measures<br>Respiratory Protection : Wearing respirator is required.<br>Protective gloves : required.<br>Eye protection : Use goggles or face shield<br>Other protective clothing/shoes and equipment : recommended. | | |
| Hygienic work practices : Wash hands and face after handling chemicals. Smoking or eating is not allowed when working. | | |

## 9. Physical and Chemical Data

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| Material state : Solid | Appearance : wire1, strap, bar |
| Color : Silver-gray | Odor : None |
| pH : Not applicable | Boiling point : Melting point : 183°C |
| Decomposition temperature : None | Flash Point : Not applicable |
| Auto-ignition temperature : Not applicable | Exposure limit : Not determined |
| Vapor pressure : Not applicable | Vapor density : Not applicable |
| Specific gravity water : 1 | Solubility : None in water |

## 10. Stability and Reactivity

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| Stability : Stable under all conditions |
| Probably hazard effect under special condition : None known |
| Condition to avoid : Heat, Flame, Wet and soaking |
| Materials to avoid : Strong acids, strong oxidizing materials |
| Hazardous decomposition products : Metal powdery dust and gas |

## 11. Toxicological Properties

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| Level of Toxicity |
| Acute effect : possibly cause irritation to eyes, nose, throat and skin. |
| Local effect : none known. |
| Sensitivity : none known |
| Effects of chronic exposure : Patients with skin or respiratory problems are likely to be harmful. |
| Special effects : None known. |

## 12. Ecological Data

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| Probable effect to environment : |
| 1. Soil dispersal |
| 2. Water dispersal |
| 3. Air dispersal |

## 13. Waste Disposal

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| Waste disposal method : Solder metal can be recycled by reclamation. |

## 14. Delivery Information

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| Internatinal delivery regulation : LATA-Dangerous Goods Regulation, Not restricted |
| UN code : Not regulated |
| Domestic delivery regulation : Road traffic Safety Regulation Item 84 |
| Vessel regulations on dangerous goos |
| Railroad regulations on dangerous goods |
| Special delivery method and precaution : None known |

## 15. Law and Regulation

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| Conform to regulation : 1. Labor Safety & Sanitary Device Regulation |
| 2. Standards for the density of hazardous materials for labor working environment |
| 3. Identification rules for hazardous and harmful materials |
| 4. Standards for waste disposal treatment and facility requirement |
| 5. Road traffic safety rules |

## 16. Additional Information

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| Reference : MSDS database, CCINFO CD 98-2, NIOSH/OSHA, Occupational Health Guidelines for Chemical Hazards, 1981 |
| Prepared by : Tony Yang |
| Date : January. 31, 2002 |
| Remark : These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. |